



**STUDENT IDENTIFICATION NO**

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# **MULTIMEDIA UNIVERSITY**

## **FINAL EXAMINATION**

**TRIMESTER 2, 2017/2018**

**BSE2414 – SOFTWARE ENGINEERING FUNDAMENTALS**  
(All Section / Groups)

03 MARCH 2018  
2.30 p.m. – 4.30 p.m.  
(2 Hours)

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### **INSTRUCTIONS TO STUDENT**

1. This Question paper consists of 4 pages with 4 Questions only (including cover page).
2. Attempt **ALL FOUR** questions.
3. The distribution of the marks for each question is given.
4. Please write all your answers in the Answer Booklet provided.

Attempt **ALL FOUR** questions.

### **QUESTION 1**

Based on the scenario given below, answer the following questions.

Flash floods caused by hours of torrential rain killed at least five people in Malaysia and military forces deployed on Sunday, Nov 5<sup>th</sup> 2017 to help rescue thousands of displaced people in the northern state of Penang. About 3,000 people had been evacuated and housed in temporary shelters as nearly 80 percent of Penang was hit by typhoon-like winds and heavy rain. As flood waters recede in Penang, it is time to examine what is lost during the most devastating flood in the state. To trace all these records, you need to produce a system to record all the victims' personal information including their lost during the flood. The system is going to base on the idea of developing an initial implementation, getting feedback from the victims and evolving the software through several versions until the required system is developed. Basically, each increment or version of the system incorporates some of the functionality that is needed by victim.

- a) Select the most appropriate general software process model that might be used as a basis for managing the development of the system mentioned above. Justify your answer. **(5 marks)**
- b) Explain **THREE (3)** benefits of the model suggested in (b). **(9 marks)**
- c) If the same system is well planned with very clear systems requirements where it has to accommodate all the victims' feedback, which software process model do you think the best to develop this system. Justify your answer. **(5 marks)**
- d) Explain **TWO (2)** problems of the model suggested in (c). **(6 marks)**

**(Total 25 marks)**

**Continued...**

## **QUESTION 2**

Using the information in table given below, assuming that the project team will work a standard working week (5 working days in 1 week) and that all tasks will start as soon as possible.

Task	Description	Duration (days)	Dependencies
T1	Requirement Gathering	7 days	-----
T2	Install Hardware	3 days	T1
T3	Install software	3 days	T2
T4	Training how to use software	4 days	T3
T5	Test system after training	4 days	T3,T4
T6	Design	15 days	T1
T7	Development	15 days	T1,T3
T8	Unit Testing	7 days	-----
T9	System Testing	7 days	T8
T10	Bug Fixes	3 days	T9
T11	Release Version	5 days	T10

- a) Project planning takes place at **THREE (3)** stages in a project life cycle. Discuss each of this stage. **(6 marks)**
- b) Draw activity network diagram. **(10 marks)**
- c) Determine the critical path of the project. Show the method of working. **(9 marks)**

**(Total 25 marks)**

## **QUESTION 3**

- a) The aims of the requirement elicitation process are to understand the work that stakeholders do and how they might use a new system to help support that work. Unfortunately, many software organizations finding it very difficult to elicit and understand requirements from system stakeholders. Discuss the reasons. **(10 marks)**
- b) Eliciting domain knowledge through interviews can be difficult. Explain **TWO (2)** main reasons. **(5 marks)**

**Continued...**

c) Draw a use case diagram based on the scenario given below.

In order to register for subjects in a university, students need to go through the following process. The student receives a registration package from the Registry by mail. He/she looks up the courses list provided in the Prospectus or Course Supplement. He/she decides which courses he/she would like to register on in the coming semester. He/she fills in the registration form and mails it back to the Registry. He/she receives a payment slip from the Registry. He/she goes to the designated bank to pay the tuition fee for the courses he/she has registered on. He/she receives instructions from the Registry to collect the course materials and the study schedules for the courses.

(10 marks)

(Total 25 marks)

#### **QUESTION 4**

a) Testing is intended to show that a program does what it is intended to do and to discover program defects before it is put into use. Explain in detail the goals of the program testing and what are these goals leading to.

(10 marks)

b) Differentiate between system testing and user testing.

(6 marks)

c) Agile methods and processes, may be used for program evolution as well as program development because these methods are based on incremental development. However, problems may arise during the handover from a development team to a separate team responsible for system evolution. Discuss **TWO (2)** potential problematic situations.

(10 marks)

(Total 25 marks)

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